

ABSTRACT

An optical top-hat pulse generator comprising a polarization-maintaining fiber loop and controlled by solitons. A polarization-maintaining coupler launches a continuous wave optical signal into the fiber loop along a principal axis of the fiber loop. Another coupler launches a control pulse into the fiber loop along another orthogonal principal axis. The fiber loop may consist of a plurality of sections of polarization-maintaining fiber spliced together so that the principal axis of one section aligns with the orthogonal principal axis of an adjacent section and the length of each individual section is chosen to achieve equal in magnitude, but opposite in sign group delays between the continuous wave optical signal and the control pulse.